

**SPECIAL STUDY OF
EMERGENCY MANAGEMENT AT
DEPARTMENT OF ENERGY HEADQUARTERS**

July 1995

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EXECUTIVE SUMMARY

A special study of policies, practices, and procedures for emergency management at DOE Headquarters was conducted from May 1 through June 30, 1995. The objectives of the study were to:

- Determine the effectiveness of Departmental guidance, including that dealing with emergency management policies, procedures, plans, formal agreements, and training of emergency management personnel.
- Determine the ability of the Headquarters emergency management system to effectively execute responsibilities associated with readiness assurance and the management of real or simulated emergencies.
- Assess plans for the proposed consolidation of the Headquarters emergency management system and its potential to provide more effective management and direction of emergency response activities. (This objective was added during the planning phase of the study in response to the Secretary's direction to consolidate.)

The study team employed standard Office of Oversight methodologies and data collection techniques to evaluate emergency management at Headquarters, focusing primarily on four areas: the organization and structure of emergency management; the policy, plans, and procedures currently in effect and proposed; the staffing and training of Headquarters Emergency Management Teams; and the facilities and equipment available at the Headquarters Emergency Operations Center. The Departmental policy identifies three categories of emergencies: operational emergency, energy emergency, and continuity of government. The study specifically examined Headquarters capabilities for managing operational emergencies. Results are reported as they apply to the two major emergency management responsibilities at Headquarters: program management (addressing general emergency management system responsibilities, such as policy making, planning, management

supervision of field elements, and training) and Headquarters emergency management operations (addressing Headquarters element responsibilities for emergency response, such as the preparedness and functioning of the Headquarters Emergency Management Teams and the operation of the Headquarters Emergency Operations Center).

The study found that program management activities at Headquarters are sufficient to allow the emergency management system to work, but not as efficiently or effectively as it should. Although policy and guidance are comprehensive and generally well accepted, there are deficiencies in the system design and implementation. Some specific conditions found to impact the effectiveness and efficiency of program management include: overlapping line management responsibilities exercised by multiple line management and non-line management organizations; lack of effective cooperation/coordination among Headquarters elements; poor management of agreements with other Federal agencies; and ineffective mechanisms for identifying and resolving emergency management problems.

Problems of greater severity were found to exist in Headquarters emergency management operations. In most cases, the involved organizations and personnel seem dedicated to carrying out their responsibilities, but deficiencies in system design cause several compounding problems that result in poor performance by the Emergency Management Teams. Identified deficiencies include: assignment of redundant responsibilities to Headquarters elements; application of a program-specific rather than a Departmental perspective to emergency management decision making; an inefficient team structure for the Headquarters Emergency Management Team; ineffective utilization of Emergency Operations Center space and equipment to support effective staff functioning; and insufficient coordination and emergency management/mutual support relationships with other Federal agencies.

Additionally, the team reviewed the proposed implementation plan for the consolidation of emergency management assets at Headquarters and found that while the plan addresses some identified deficiencies, it does not solve or does not address some existing problems that currently impair system effectiveness.

The study team made five formal **conclusions**:

1. Current Headquarters emergency management policy and guidance are generally well received and accepted by the field.
2. Overall, program management has not resulted in an effective or efficient emergency management system.
3. A less than effective concept of operations has contributed to significant and recurring deficiencies in the performance of the Headquarters Emergency Management Teams.
4. Interfaces (internal and external) between emergency management organizations do not adequately support effective emergency management.
5. The Strategic Realignment Implementation Team's proposed plan for consolidating emergency management assets at Headquarters will not provide optimum results.

Based on the results, analysis, and conclusions, the study team identified two **candidate actions** for enhancing the emergency management program:

1. ***Consolidate responsibilities for Headquarters emergency management.*** Assigning management responsibility for emergency management to a single organization would eliminate redundancy in staffing and effort and reduce the size of the necessary Headquarters staff. The newly consolidated office would be responsible for the development of all DOE emergency management policy and would provide a single source of consistent guidance to all

field elements. The newly consolidated office would also be responsible for the Headquarters Emergency Operations Center and associated operating and field interface procedures (see below), including the training of all designated Headquarters Emergency Operations Center responders.

The operations office managers would be responsible for management of all emergency management activities under their purview, including appraisals and training. Each Headquarters program office would focus on assisting its assigned operations offices in executing their emergency management responsibilities by identifying required resources, coordinating Headquarters actions, and providing technical experts to the Emergency Operations Center for affected facilities, as appropriate. The Associate Deputy Secretary for Field Management would continue to provide a crosscutting view of the operations offices in order to promote uniformity of approach and to ensure that operations offices' concerns are addressed.

To ensure a Department-wide perspective, the newly consolidated Emergency Management Office should not be assigned to a program office. There could be some benefits in placing it under Human Resources and Administration, which has existing responsibilities for the communications center and computers that might provide synergisms and economies of scale in facility and equipment operation and maintenance.

2. ***Revise the Headquarters Emergency Operations Center team structure and concept of operations.*** A revised concept of operations should clearly focus emergency management operations on the missions, functions, and responsibilities appropriate to Headquarters. The revised focus should also ensure that the Headquarters emergency management response maintains a Department-wide perspective. All Headquarters Emergency Operations Center operating procedures will be developed and maintained by the newly consolidated Emer-

gency Management Office, in coordination with field organizations, program offices, and other Headquarters elements as appropriate.

The revised team structure should be a single tiered organization directed by an Emergency Manager. The Emergency Manager would be selected from a small group of senior managers designated by the Under Secretary in consultation with the Assistant Secretaries. When acting as Emergency Manager, he/she would represent the Department and would report to the Secretary through the Under Secretary. The Emergency Manager would also keep Assistant Secretary-level

managers informed and involved as appropriate. A team Chief of Staff would be provided by the new Emergency Management Office. The Chief of Staff would supervise the staff functioning of the Emergency Management Team and advise the Emergency Manager on Emergency Operations Center/Emergency Management Team capabilities and established emergency management procedures and protocols.

Technical expertise relevant to the emergency would continue to be provided by the program office with programmatic responsibility for the affected facility under direction of the Emergency Manager. Other team positions requiring special knowledge or technical expertise (e.g., public relations, security, health physicists) would continue to be filled by appropriate Headquarters elements. Other positions, such as equipment operators and administrative assistants, would be provided by the new Emergency Management Office. All individuals designated to respond to the Emergency Operations Center will be trained by the newly consolidated Emergency Management Office.

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Special Study of Emergency Management at Department of Energy Headquarters

1.0 INTRODUCTION

The Office of Oversight conducted a special study of emergency management at Department of Energy Headquarters.

The Office of Oversight (EH-2), at the direction of the Deputy Assistant Secretary for Oversight, conducted a special study of policies, practices, and procedures for emergency management at Department of Energy (DOE) Headquarters. The special study was conducted between May 1 and June 30, 1995. This report documents the purpose of the study, the conditions under which the study was conducted, the results, and the subsequent conclusions and candidate actions for enhancing the program. The methodology for the study is also described.

1.1 Background

The Department is responsible for managing the response to operational emergencies at its facilities.

The Department oversees many high asset-value facilities that employ many people, use and store extremely hazardous substances, routinely engage in potentially hazardous operations and processes, and perform vital national security missions. Consequently, emergencies at these facilities—whether resulting from natural phenomena or intentional or unintentional human acts—have the potential for endangering the health and safety of the workers and public, or adversely affecting the environment or national security. Further, the required responses to some potential emergency situations at DOE facilities are beyond the experience and capabilities of nearby local government emergency response organizations. The Department itself, therefore, has primary responsibility for responding to and managing the response to emergency situations at its facilities or involving its assets. This responsibility, inherent in DOE's operations, requires the continuous maintenance of adequate levels of emergency preparedness, including emergency response and emergency management capabilities.

Responsibilities for responding to and managing operational emergencies are distributed throughout all levels of the Department.

The current DOE emergency management system was created in the late 1980s as the result of a review of the Department's emergency preparedness activities, conducted by a Secretary of Energy-initiated Emergency Preparedness Working Group. System modifications were made and the current orders were issued in the early 1990s, following a 1989 study of emergency management in the DOE sponsored by the Office of Security Evaluations (now part of EH-2) and the Office of Emergency Operations (DP-6, now NN-60). DOE policy, as defined in DOE orders, delineates the distribution of responsibilities for responding to and managing operational emergencies affecting Departmental facilities among facility contractors, field elements, and Headquarters elements. Current policy assigns the following responsibilities to the Headquarters Emergency Management Team: providing overall (strategic) management and direction to a DOE emergency response; coordinating or assisting in the activation and offsite deployment of DOE or other

Federal agency response assets; coordinating overall public information activities; and providing interfaces with other national-level Federal agencies, Congress, the White House, and international agencies. Responsibilities and authorities for accomplishing these functions, including maintaining and operating the Headquarters Emergency Operations Center and staffing the Headquarters Emergency Management Team, are apportioned among the Under Secretary, the Cognizant Secretarial Officer having programmatic responsibility for the affected facility (program office), the Director of Emergency Operations, and various other Headquarters elements.

The special study was prompted by persistent problems and the need to improve capabilities at Headquarters.

The various adjustments to the Headquarters emergency management concept, including facility improvements and modifications to responsibilities and procedures, made during the past decade in an effort to better accomplish Headquarters' emergency management responsibilities have not eliminated identified deficiencies or quieted criticism of Headquarters' emergency management capabilities and actions. Persistent criticisms from independent evaluators, field

elements, and Headquarters elements with emergency management responsibilities span the spectrum of emergency management functions, touching on such areas as facilities and equipment, training of Emergency Management Team personnel, vagueness of policy, and lack of consensus among responsible Headquarters elements regarding appropriate emergency management responsibilities and procedures. Further, the performance of Headquarters Emergency Management Teams during exercises has been criticized by both participants and independent evaluators. The persistence of criticisms in emergency management capabilities at Headquarters and the need to further improve those capabilities to assure that they will function during actual emergencies provided the impetus for this special study.

A number of Departmental organizations are involved in ongoing initiatives that will affect emergency management capabilities and responsibilities.

Other Departmental initiatives, concurrent with this special study, may have a significant impact on emergency management at Headquarters. On May 12, 1994, the Under Secretary established a task force to conduct a Congressionally-mandated review of the feasibility of consolidating emergency management functions and activities at Headquarters. On October 31, 1994, that task force concluded that "no significant cost savings could be realized" by such consolidation, but did recommend some short-term and long-term enhancements. On February

10, 1995, the Director of the Office of Nonproliferation and National Security (NN-1) distributed a proposed plan to modify the Headquarters Emergency Management Team by establishing a core Emergency Management Team in which some primary functions and authorities are shifted from the cognizant program offices to NN. These changes will become policy if draft DOE Order 5500.1C, Emergency Management System, is approved as currently written. In early May 1995, after the initiation of this special study, the Secretary of Energy directed that, as part of the strategic alignment initiative, emergency management positions at Headquarters, currently distributed principally among NN-60 and the program offices, be consolidated into a single (unspecified) organization, with a net reduction of 24 positions. Representatives of the affected organizations met concurrent with this special study to determine recommendations for implementing the Secretary's directive. In addition to providing an independent assessment of the status of the emergency management program, this report is intended

to provide baseline information to assist those personnel designated to implement the Secretary's strategic alignment initiative as it relates to the emergency management program.

1.2 Purpose

The special study addressed the effectiveness of current guidance, the capabilities of the current emergency management system, and the impact of plans resulting from ongoing initiatives.

The purpose of this special study was to investigate the ability of the Headquarters Emergency Management Team/Emergency Operations Center and associated emergency management programs at DOE Headquarters to effectively provide a Headquarters-level response to emergency events. Specific objectives were to:

- Determine the effectiveness of Departmental guidance, including that dealing with emergency management policies, procedures, plans, formal agreements, and training of emergency management personnel.
- Determine the ability of the Headquarters emergency management system to effectively execute responsibilities associated with readiness assurance and the management of real or simulated emergencies.
- Assess plans for the proposed consolidation of the Headquarters emergency management system and its potential to provide more effective management and direction of emergency response activities. (This objective was added during the planning phase of the study in response to the Secretary's direction to consolidate.)

1.3 Scope

The special study focused on the ability of DOE Headquarters to fulfill its roles and missions in managing responses to operational emergencies. The data gathering activities were organized according to the following four areas: organization and structure of emergency management at Headquarters; policy, plans, and Headquarters procedures for emergency management; staffing of Headquarters emergency management positions and training of personnel; and Headquarters emergency management facilities and equipment. Approved Office of Oversight methods and procedures were employed during all phases of the special study to assure thoroughness, consistency, and validity of results. Additional details on the methods used to gather and analyze data are included in Appendix A.

Operational emergencies were addressed because they involve more intensive Department effort than energy emergencies or continuity of government.

The study specifically examined Headquarters capabilities for managing operational emergencies, since they are most likely to require immediate and intensive emergency management actions and a commitment of emergency management personnel and facilities. Operational emergencies are significant accidents, incidents, events, or natural phenomena that could seriously degrade the safety or security of DOE facilities. Although not a focus of this study, the Department also has

missions associated with two other categories of emergency situations: energy emergencies, which involve disruptions or potential disruptions of energy supplies; and continuity of government, which assures that the constitutional framework of government will continue regardless of the type or severity of disaster or threat to national security. Headquarters management activities associated with purely energy emergencies typically do not involve the intensity, immediacy, or resources comparable to those required for an operational emergency, and do not usually require the activation of the Headquarters Emergency Management Team or use of the Emergency Operations Center. Additionally, no history of significant problems in the Department's handling of energy emergencies was encountered. While continuity of government situations potentially involve a wide spectrum of activities, ranging from decisions to deploy DOE response assets in support of non-DOE situations to intensive continuity of government operations, the potential nature and level of effort required of DOE is not likely to exceed that required for a significant operational emergency. Further, DOE would likely have primary responsibility for management of operational emergencies at its facilities, but would not normally have primary responsibility for situations associated with energy emergencies or continuity of government. Consequently, the focus on operational emergency response capabilities is logical and provides DOE managers with the most useful results.

Since this study was concerned only with Headquarters capabilities, the emergency management capabilities of field elements and facility contractors were not addressed. However, from the outset it was recognized that the study was potentially the first element of a broader evaluation of emergency management capabilities in the Department.

1.4 Organization of the Report

Section 2, Results and Analysis of Headquarters Emergency Management, lists the significant information resulting from the data collection effort and provides analyses of the effectiveness of the two general Headquarters program responsibilities: program management and Headquarters emergency management operations. Sections 3 and 4 present the conclusions and candidate actions for enhancing the emergency management program.

2.0 RESULTS AND ANALYSIS OF HEADQUARTERS EMERGENCY MANAGEMENT

Program management and emergency management operations were addressed.

The results are reported in this section under two major categories: program management and Headquarters emergency management operations. These two major categories are discussed in Sections 2.1 and 2.2 respectively. In addition to these two major categories, the potential effectiveness of the proposed effort to consolidate Headquarters emergency management functions is briefly discussed in Section 2.3.

2.1 Program Management

Program management addresses general emergency management system responsibilities, such as policy making, planning, management supervision of field elements, and training. The evaluation of program management is divided into three subsections. The first subsection summarizes the information on DOE policy as it relates to program management, with emphasis on the design of the emergency management system at the Headquarters level (i.e., how the system is supposed to function). The second subsection focuses on the actual implementation of program management responsibilities (i.e., how the system functions in practice). In the third subsection, the information about policy and implementation is analyzed, focusing on the overall effectiveness of Headquarters program management.

2.1.1 Emergency Management Policy

Departmental policy is comprehensive in defining the elements of the emergency management system, assigning responsibilities, and providing direction and guidance.

The Departmental emergency management system, as delineated in the 5500 series of orders and related guidance, is intended to provide a “general framework for: the development, coordination, exercise, testing, and validation of emergency plans and procedures; ensuring the readiness of all DOE emergency response capabilities relative to the three broad categories of emergencies ... ; and the management, coordination, and direction of responses to emergencies.” The policy is comprehensive in addressing the various elements of the emergency management system, assigning responsibilities, and providing direction and guidance to Headquarters and field elements. Basic tenets of policy are discussed in this section, as are some significant specific policy elements. No attempt is made to repeat or fully describe the details of the body of policy pertaining to the emergency management system. Sufficient detail is included here to convey an understanding of the basic Headquarters emergency management system design and the policy instruments used to convey that design.

Draft orders currently in the review/approval process are not addressed here.

Draft revisions of DOE orders providing basic policy for the emergency management system are currently in the review/approval process. They contain changes to emergency management policy, functions, and responsibilities at Headquarters. However, it is not known whether the

concurrences required for their approval will be achieved, or how the pending consolidation of emergency management assets and functions at Headquarters will affect the draft orders as written. Consequently, the draft orders are not addressed further in this report.

The Headquarters emergency management system has organizational redundancies in the relationships of the program offices and the current Office of Emergency Management (NN-60).

The Under Secretary of Energy is the senior policy official responsible for emergency management planning and preparedness activities. Under the policy guidance of the Under Secretary, the Director of Emergency Operations in NN-60 is assigned implementation responsibilities for the emergency management system. These responsibilities include drafting orders and issuing guidance, conducting appraisals and providing technical assistance to Headquarters and field elements, reviewing exercise plans and evaluating performance, maintaining the Headquarters Emergency Operations Center, and coordinating relevant emergency management functions with the program offices. (An Emergency Management Advisory Committee, chaired by the Director of Emergency Operations and composed of representatives of major Headquarters and field elements, is chartered to support the Director of Emergency Operations by developing specific policy and technical recommendations related to emergency management.) Cognizant Secretarial Officers with programmatic responsibility for DOE facilities are assigned typical line management responsibilities for ensuring that emergency management requirements are properly implemented in the field. These line management responsibilities include funding, planning, training, appraisals, and technical assistance. Program management relationships between Headquarters and field elements are illustrated in Figure 1. As shown in the figure, the system contains built-in redundancies in the relationships of the program offices and NN-60 with field elements.

A number of features strengthen the system.

The system design (i.e., the structure that has been established by policy for implementing and directing the emergency management system at the Headquarters level) incorporates a number of features that tend to promote and strengthen the needs and objectives of the system:

- Direct management responsibility for the emergency management system is assigned to the Under Secretary, allowing visibility and attention at a high level within the Department.
- The system defines the responsibilities for emergency response at all three levels. It recognizes that the site has primary responsibility for emergency response and management; that the DOE field element has primary responsibility for DOE administration, support, and coordination; and that Headquarters has responsibility for strategic direction and national-level support and coordination.

DOE EMERGENCY MANAGEMENT SYSTEM

INTERFACE BETWEEN HEADQUARTERS AND FIELD ELEMENTS

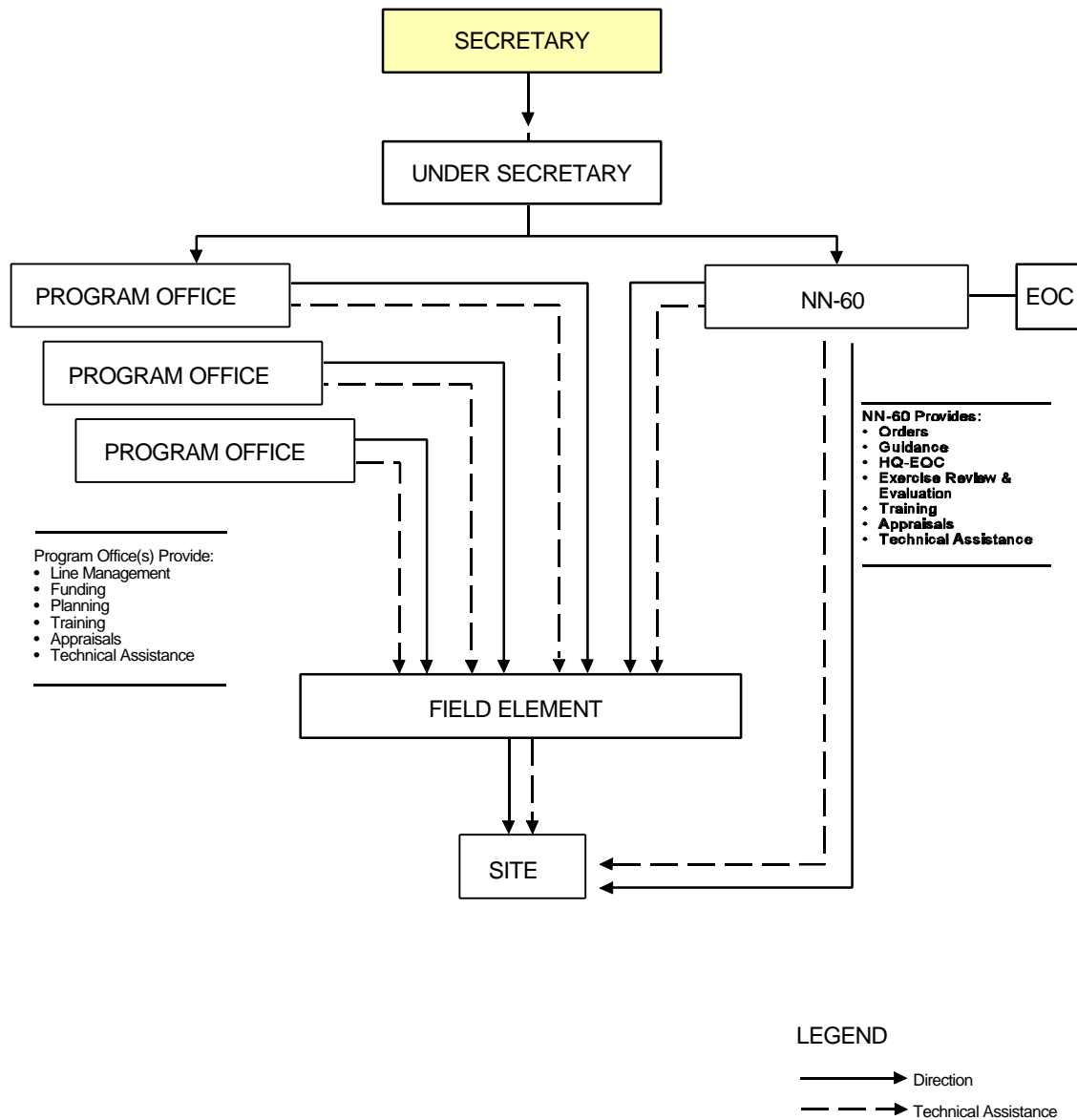


Figure 1

- The system design is compatible with other Federal, state, and local emergency management systems. For example, it prescribes the use of such common elements as Protective Action Guides, the emergency classification scheme, and the Incident Command System.
- The Emergency Management Advisory Committee provides a non-prescriptive forum for exchanging information and addressing system problems.
- The policy recognizes the importance of and need for periodic practical exercises at the local site level, as well as system-wide exercises that involve the coordinated participation of the site, the field element, and Headquarters.
- The organizational placement and management of DOE-owned national (primarily radiological) response assets in appropriate program offices are effective.

Other features tend to impede efficiency.

The system design also contains a number of features that tend to impede efficient system implementation or cause confusion in management authorities:

- The assignment of identical roles and responsibilities to the program offices promotes varying policy interpretations and duplication of functions at the Headquarters level.
- The system assigns some roles and responsibilities to NN-60 that duplicate line management responsibilities assigned to the program offices. These include such functions as reviewing emergency management plans and procedures, conducting appraisals of field elements, evaluating readiness assurance functions at field elements and facilities, and tracking and validating corrective actions.
- Policy does not require a consolidated and comprehensive emergency management plan for Headquarters. Each program office with major emergency management responsibilities is required to have a plan, as is NN-60; however, there is no specific mechanism to ensure compatibility of the various plans or to ensure that, between the NN-60 plan and each program office plan, all necessary elements are addressed.

Program direction, which translates the system design into action, emanates from Headquarters and is promulgated through orders, guides, memoranda, and other directives that apply Department-wide. Drafting of emergency management-related orders and development of Emergency Management Guides are responsibilities of NN-60, under the policy guidance of the Under Secretary and with the assistance of the Emergency Management Advisory Committee. NN-60 also provides program guidance through technical assistance activities. Additionally, program offices provide program direction to the field as part of their line management responsibilities.

Departmental elements find the approach to program direction acceptable and workable.

Program direction appears to be generally acceptable to Departmental elements and workable for the following reasons:

- Both Headquarters and field elements express general satisfaction with current emergency management policy as established by current order. Additionally, the comprehensive set of Emergency Management Guides is generally accepted and used by the field.
- Program offices, with some exceptions, have been proactive in providing specific guidance to field elements consistent with the scope of their programmatic responsibility.
- The program offices providing direction to the field also provide funding. Since funding and direction come from the same source(s), interest is focused on the direction received.

However, the fact that several entities provide direction could lead to contradictory guidance.

Even though current program direction is generally viewed favorably, it contains some weak elements that could potentially impede system performance. The primary weakness stems from the fact that direction to the field emanates from a number of different sources, such as the various program offices and NN-60. A given field element could receive emergency management program direction from NN-60 and one or more program offices. In this situation, the direction received from the various sources could be inconsistent, conflicting, or contradictory.

Policy and guidance come from a variety of sources.

Emergency management policy and guidance are provided by various sources through various means:

- NN-60 has developed a comprehensive body of policy that has been promulgated through the orders process. The current orders are generally considered to be adequate by Headquarters and field elements. However, two specific criticisms were expressed. First, some Headquarters and field elements felt that the orders are too prescriptive, allowing insufficient flexibility for cost-effective implementation in some cases. Second, some program offices felt that the policy inappropriately assigns some roles to NN-60 that are in fact line management functions and therefore the proper responsibilities of the program offices.
- NN-60 has published a number of Emergency Management Guides, which provide more specific guidance for implementing various aspects of emergency management policy. The Guides have been generally accepted by Headquarters and field elements. However, some field elements have been selective in implementing the Guides, and in some cases have developed their own alternative procedures.
- Program offices also provide guidance to field elements as they deem necessary, normally through correspondence or oral communication. Program offices indicate that their guidance to the field is consistent with the formal Guides, and they try to avoid conflict with the Guides and other guidance.

2.1.2 Emergency Management Implementation

This section attempts to explain who actually does what, and how they do it, in reference to emergency management activities at the Headquarters level. It addresses implementation of primary program management functions associated with the emergency management system, as well as some specific implementation details that are worthy of mention because of their positive or negative effects on system performance. The discussion is organized according to the following topics: program integration at Headquarters, Headquarters-field interface, assessments and appraisals, training and exercises, standardization of equipment, and external agreements.

Program Integration at Headquarters

There are areas of strong disagreement between some program offices and NN-60 concerning how the system should be implemented.

Due to the specific roles and responsibilities embodied in the emergency management system design, implementation of the system design requires close cooperation and coordination between program offices and NN-60. Interviews established a general dissatisfaction with the level of cooperation and Headquarters organizational relationships vis-a-vis emergency management responsibilities. There are areas of strong disagreement between some program offices and NN-60. An example is the development of a concept of operations for the Headquarters

Emergency Operations Center. The four principal program offices disagree with NN-60 on basic issues within the concept of operations, such as the Deputy Chair of the Headquarters Emergency Management Team and other organizational issues affecting the Emergency Management Team. The concept promulgated by NN-60 is considered unworkable by some program offices, who, when they are in charge of the Emergency Management Team, use their own concepts. When program offices and NN-60 reach an impasse on such an issue, there is no workable mechanism for achieving resolution.

The established avenues for information exchange are not functioning effectively.

Several formal and informal avenues exist that are intended to share information, monitor program status, and foster program improvements. In practice, none of these avenues is functioning effectively. For example:

- The Emergency Management Advisory Committee, representing Headquarters and field elements, has not fulfilled its intended purpose. While it meets occasionally, it has not proactively sought to identify and recommend solutions to issues and problems. It was generally described as ineffective during interviews.
- The Emergency Management Coordinating Committee, an unofficial group initiated by program offices to cooperate on Headquarters emergency management issues, has no innate authority. The group has met, and information has been exchanged among attending program office representatives. However, NN-60 does not view the purpose of the Emergency Management Coordinating Committee as resolving significant issues, but as exchanging information only. Although the group is sharing information it has not proved to be an effective forum for resolving the most significant issues.

- The Annual Report to the Under Secretary, which NN-60 is required by DOE Order 5500.1B (4-30-91) to submit annually on March 31, has only been submitted once, in 1994. This opportunity to outline program status and get high level attention for issues and problems has been missed.

Headquarters-Field Interface

Essential elements of program direction and interfaces are in place and functioning.

In general, essential elements of Headquarters-field interfaces are in place and functioning. Most program offices and NN-60 are formally and actively involved on a continuous basis, through various channels, with emergency management programs at Headquarters and in the field.

Most program offices are actively carrying out their line management responsibilities.

Line management responsibility for implementation of the emergency management program flows through the Cognizant Secretarial Officers. Most program offices are actively carrying out those responsibilities, except for the Office of Fossil

Energy, which does not have an active emergency management program at Headquarters. Each has made organizational assignments for emergency management program responsibilities and has assigned staff resources to accomplish the associated work. Most maintain interaction with field elements by providing guidance, participating in and reviewing planning, monitoring performance, and cooperating on exercises. While the level of resources assigned by program offices varies, except for Fossil Energy's program there is no indication that emergency management program needs have been ignored by the program offices.

There is some duplication of effort in this area at the policy level.

However, there is some duplication in this area built into the system at the policy level, sometimes resulting in inefficiencies and organizational conflicts. Specifically, some roles assigned to NN-60 (such as conducting appraisals and evaluations, reviewing field element emergency plans, and tracking and validating corrective actions) duplicate responsibilities traditionally associated with line management. Specific areas of duplication will become apparent in some of the following discussions.

There is no coordination between NN-60 and the program offices in reviewing emergency plans.

Emergency plans submitted by the field elements are reviewed by the program offices. Some program offices formally approve the plans; others review and comment but do not approve or disapprove. NN-60 is also required to review all field element plans and procedures in conjunction with the program offices to ensure consistency with policy and to reduce duplication of effort among program offices. There is no indication that a mechanism exists for a coordinated review of field element plans or procedures by NN-60 and the program offices to achieve these goals.

Assessments and Appraisals

A number of concerns were noted in performance review of field emergency management preparedness and capabilities.

Assessment activities focusing on field emergency management and preparedness capabilities are fragmented and duplicative. Evaluation of program implementation is a traditional line management responsibility. Most program offices attempt to fulfill this responsibility through a variety of management techniques, including program reviews, site visits, and exercise evaluations. However, specific concerns noted in this area include:

- NN-60 is also tasked with some appraisal functions, specifically to review emergency management programs of Headquarters and field elements and to evaluate readiness assurance functions at Headquarters, field elements, and sites.
- NN-60 has conducted appraisals at most, but not all, major sites. This “first round” of appraisals was intended to establish a baseline of knowledge regarding emergency management capabilities within the Department. Although NN-60 indicates that most sites (and all of the most significant sites) have been appraised, no analysis of the resulting baseline information has been initiated.
- NN-60 also evaluates emergency management capabilities by evaluating performance during selected emergency management exercises that have been scheduled and planned by sites and field elements. Evaluation criteria promulgated in the Emergency Management Guide are used for these evaluations.
- Some program offices contend that evaluating field element performance is a line management (program office) and independent oversight (EH-2) responsibility. Some operations offices indicated that they believe evaluating field facilities is their responsibility.

Headquarters lacks a coordinated system for tracking, validating, and closing emergency management-related deficiencies.

Headquarters does not have an integrated corrective action system for tracking, validating, and closing identified deficiencies in the emergency management system. Some formal tracking systems exist and some informal procedures are used, but they are not comprehensive. Concerns include the following:

- Only two program offices (Defense Programs and Environmental Management) have formal deficiency tracking systems; both are automated, both are very new, both concentrate on Headquarters level deficiencies, and due to their newness neither has a sufficient

operating history to verify their effectiveness. No program office has a system to formally validate corrective actions accomplished at Headquarters. Validation of corrective actions for deficiencies in the field is considered the responsibility of the field elements.

- NN-60 has an automated tracking system for deficiencies identified by NN-60. For updating of current status it relies on voluntary submission of responses by the organization with the assessed deficiency. Responses received are not validated.
- There is no formal mechanism for sharing information about deficiencies, corrective actions, or lessons learned among the program offices and NN-60. Information that does exist in the tracking systems is generally not shared, and distribution of exercise reports is generally limited to the participants.

Training and Exercises

NN-60 and some program offices provide some emergency management-related training to the field.

Headquarters elements do not provide substantial emergency management training to field elements. NN-60 and some program offices provide some specific training to the field, and each does so independently. NN-60 is the most active in this area, having provided Emergency Operations Center-related training in conjunction with appraisals, and having conducted training and workshops on hazard assessment, event classification, consequence assessment, and exercise development. It has completed development of a computer based training course for field use, but has not yet distributed it.

Field sites take the lead in meeting the requirement for conducting emergency management exercises; however, coordination could be improved.

The emergency response/management exercise program, required by policy, is essentially generated in the field. Sites and field elements develop annual exercise plans and provide exercise schedules to the program offices and NN-60. The programs include a range of activities, from tabletop exercises and simulations to full participation exercises. Typically, each program office selects a full participation exercise at one of its sites for participation by the Headquarters Emergency Management Team. The program office participates in planning that exercise, including planning for Headquarters participation. Similarly, NN-60 participates in at least one scheduled emergency response exercise each year. There is some program office and field element criticism regarding NN-60's tendency to join the planning activities for these exercises very late in the cycle, resulting in some disruption of existing plans and agreements and ineffective exercises that do not fully involve or test all aspects of Headquarters emergency management operations.

In March 1994 NN-60 partially funded, conducted, and evaluated "Exercise Porcupine." This exercise was the first in a series of annual Headquarters performance tests. A similar exercise is planned to be conducted at a Nuclear Energy facility in September 1995.

Standardization of Equipment

A recent effort by NN-60 to standardize certain emergency-related capabilities by installing Sun workstations throughout the complex was not well coordinated and has been ineffective.

In an attempt to standardize certain communications and information management capabilities in the Headquarters and major field Emergency Operations Centers, a wide area network (WAN) was proposed and funded. NN-60 procured and installed several equipment items throughout the complex (a few locations have yet to receive the items). The WAN is planned to provide voice, video (still and conferencing), and data transmission capability between Headquarters and major field Emergency Operations Centers. Because of the wide diversity of computer equipment already in use at sites throughout the complex, a UNIX-based system with Sun (computer) workstations was proposed in order to minimize interface problems. However, there is a significant problem with the Sun workstations; NN-60 and various field elements expressed conflicting opinions about the nature and cause of the problem. The result is that the Sun workstations are in place in most field elements, and have been for well over a year in some cases; they are not being and have not been used; their deployment and intended use were not well coordinated; personnel at the field elements have not been trained in their use; and there is no agreed upon concept of operations for how they will be used, although NN-60 is in the process of developing one.

External Agreements

Agreements with other agencies are not adequately maintained.

Responsibility for executing national-level emergency response/management agreements with other Federal agencies is distributed among various Headquarters elements, usually based on programmatic responsibilities. NN-60 is tasked with ensuring that such interagency agreements are maintained and that they meet Departmental policies and objectives. Some program offices enter into and maintain agreements specifically pertinent to their areas of responsibility. NN-60 maintains some agreements that are more general in nature, or not within the purview of a specific program office. However, there is no single repository or listing of all such agreements, and there is no mechanism for quickly assembling such a list.

Further, the agreements maintained by NN-60 (that is, copies of which are in NN-60's possession) are dated between 1959 and 1991; none was executed during the current administration, some of the more recent ones are in draft and unsigned, and some are between organizations that no longer exist. There is no evidence that the agreements are periodically (or ever) reviewed for continued applicability or verified/renewed with the second party.

2.1.3 Analysis of Headquarters Program Management

Although program management has been sufficient to develop and minimally maintain an emergency management system, faulty system design and poor implementation have led to problems.

Program management responsibilities entail promulgating policy that establishes a system design and provides the parameters for implementing that design, and providing funding, staffing, guidance, oversight, and other management resources to ensure that the design is adequately implemented. The basic elements of program management are in place and have been sufficient to enable the development and minimal maintenance of a Departmental emergency management system.

However, the system suffers from a number of problems, some resulting from faulty system design and others from poor implementation.

The manner in which policy has assigned roles, responsibilities, and functions has caused some problems in system implementation.

The Department has performed well in promulgating policy and supporting guidance that is sufficiently comprehensive, understandable, and achievable to enable the overall system to function reasonably well. While dissatisfaction with some aspects of policy have been expressed by various Departmental elements, the basic overall opinion expressed is that the policy is adequate. However, some elements of the system design promulgated by the policy are directly responsible for some serious problems encountered in system implementation. These are primarily associated with the assignment of roles, responsibilities, and functions.

Many field elements receive guidance from two or more line-management program offices and from NN-60, which carries out some line-management functions. There is a resulting potential for contradictory guidance and inadequate accountability.

The assignment of roles and responsibilities for the emergency management system establishes the framework for how the system will be implemented. Generally, responsibility for system implementation is placed on line management, which is normally an appropriate and effective management principle. However, with the Cognizant Secretarial Officers serving as line managers, there is no single line management chain to the field elements. Rather, many field elements are at the end of the line management chains for two or more program offices. Consequently, they receive direction, guidance, requirements, oversight, and demands from multiple sources. To further complicate matters, NN-60, which is not a line management organization, is specifically assigned some typically line management-type functions that it exercises over all Headquarters and field elements, compounding the level of duplication. With so many organizations in charge, it is questionable whether anyone can effectively be totally in charge, or whether anyone can be held accountable for system performance. The resulting potential for conflicting and competing direction and requirements can affect all significant system components at the field level, including planning, procedures, training, and corrective actions. Since the effectiveness of system performance in the field is beyond the scope of this study, we cannot speculate on the empirical effects of these duplicate, overlapping, and conflicting line management relationships, but the situation seemingly could only detract from the system's efficiency, if not effectiveness.

The required coordination between NN-60 and the program offices is not evident.

Perhaps in anticipation of problems such as those described above, policy specifically charges NN-60 to coordinate with the program offices to avoid duplication of effort and promote standardization. However, regardless of this charge, the system neither fosters nor promotes cooperation. Due to the overlapping responsibilities and consequent competing interests of the various Headquarters organizations, the resulting environment is not conducive to the level of cooperation necessary to overcome these problems created by system design.

Lack of coordination with program offices accounts for the failure of NN-60's effort to standardize certain equipment.

The placement of the Sun workstations at various field facilities as part of the equipment standardization effort is a further example of faulty planning, coordination, and cooperation. NN-60 is tasked with

promoting standardization of communications throughout the system, so their decision to place this equipment is reasonable. However, NN-60 has no real authority over the field, and the program offices were apparently not directly involved in this effort. All necessary preliminary planning and coordination were not accomplished, and the result is that this expensive equipment has been sitting idle in the field for a long period with no agreeable concept of employment and not fulfilling its intended purpose.

There is no evidence that emergency management-related agreements with other agencies are current or appropriate, or that the agreements required by policy are in fact in existence.

The status of emergency management-related agreements with other Federal agencies at the Headquarters level is deficient. Responsibility for making such agreements is distributed among program offices and NN-60, with NN-60 responsible for ensuring that they are maintained and that they meet DOE policies and objectives. However, there is no system for managing or controlling these agreements. There is apparently no single location where copies of all of these agreements are collected, and no list of all such agreements. NN-60 has no way to know whether they have been informed of or provided copies of all agreements executed by other Headquarters elements. Some of the agreements in the

possession of NN-60, such as a 30-year-old agreement between two organizations that no longer exist, are neither valid nor enforceable. None of the agreements “maintained” by NN-60 show evidence of currency, such as having been renewed, verified, or validated. It would seem, at a minimum, that all such agreements should be reviewed periodically, at least within two years of a change of administration, to ensure that they satisfy the needs of the current Departmental policy and responsibilities. Currently the Department does not have a system for determining exactly what the Department’s obligations are under these agreements, or what obligations other agencies have made to the Department. Neither is it known whether all existing agreements remain appropriate, or whether all necessary agreements have been executed.

Provisions for management control of the emergency management system are not implemented as designed, and there is no functional mechanism for identifying and resolving problems.

The emergency management system has built-in features to identify and resolve problems such as those discussed above, and to keep responsible senior managers informed of the true system status. However, these system control features are not being implemented as envisioned in the system design. The Emergency Management Advisory Committee was designed for the specific purpose of identifying and developing recommended solutions to system problems. The committee is not effective in doing so, and in fact it appears that it is not being used to even try to achieve those goals. Further, there is no indication that existing problems have been elevated to the attention of the Under

Secretary, the responsible senior policy official. The system status report that is required to be submitted to the Under Secretary annually was not submitted in two of the last three years. Consequently, there is currently no functional mechanism for identifying and resolving systemic problems or bringing them to the attention of senior management. So not only is the system not self-healing, but the Under Secretary may not be receiving the information that would cause him to take positive actions to correct or improve the system.

Deficiencies in design and implementation make the system more complicated and less efficient than necessary.

Overall, program management activities at Headquarters are allowing the emergency management system to work, but not easily or efficiently. Deficiencies in system design, competing organizational interests, and

poor implementation of program management functions combine to make implementation of the emergency management system throughout the Department more difficult, more complicated, and less efficient than it should be or needs to be.

2.2 Headquarters Emergency Management Operations

Section 2.1 addressed Headquarters' general program management role in the complex-wide emergency management system. This section focuses more narrowly on Headquarters elements' responsibilities for emergency response, such as the preparedness and functioning of the Headquarters Emergency Management Teams and the operation of the Headquarters Emergency Operations Center. The evaluation of Headquarters emergency management operations is divided into three subsections, following the same general outline as Section 2.1. The first and second subsections summarize the information gathered in the areas of policy and implementation, respectively, as they relate to Headquarters emergency management operations. This information is analyzed in the third subsection.

2.2.1 Headquarters Emergency Management Operations Policy

Emergency management structure, functions, and responsibilities are set out in orders.

Policy regarding the Departmental emergency management system as expressed in the 5500 series of orders addresses the structure of the Headquarters Emergency Management Team and the functions and responsibilities associated with Headquarters emergency management operations. Basic tenets of policy are discussed in this section, as are some significant specific policy elements. No attempt is made to repeat or fully describe the details of the body of policy pertaining to Headquarters emergency management operations.

Each program office is responsible for developing its own Emergency Management Team, with support from NN-60.

Responsibilities for emergency management operations at the Headquarters level are distributed among many Headquarters elements. When emergency management operations are required at the Headquarters level, an Emergency Management Team is activated. The team includes an Executive Team of various combinations of Assistant Secretaries chaired by the Under Secretary, or, in his absence, the Assistant Secretary with programmatic responsibility for the affected facility; and a supporting Technical Operations Cadre, staffed by various Headquarters elements and directed by a representative of the program office responsible for the affected facility. Each program office is responsible for developing an Emergency Management Team to manage the Headquarters response to emergencies at facilities for which they have programmatic responsibility. Responsibilities associated with each Emergency Management Team include developing plans and procedures; staffing identified positions; and training/exercising team members. Other Headquarters elements are responsible for staffing specific Emergency Management Team technical positions. NN-60 is responsible for managing, operating, partially staffing, providing system support, and providing plans and procedures for the Headquarters Emergency Operations Center; providing notifications and assisting in initial Headquarters response

to emergencies; and providing training support to Emergency Management Teams. The Emergency Management Team is to provide strategic direction and support to the emergency location and coordinate information flow and external support at the national (and international) level. The emergency management operations relationships between Headquarters elements and between the Headquarters Emergency Management Team and the field elements are illustrated in Figure 2.

Clearly stated roles and centralized facilities facilitate Headquarters' emergency response.

The system provides features that facilitate Headquarters-level emergency management operations:

- The policy clearly establishes the roles and responsibilities of the organizations involved. This includes the responsibilities of the Executive Team and Technical Operations Cadre as well as those of the organizations providing staffing for the Emergency Management Team.
- The policy provides for a centralized facility (Emergency Operations Center) equipped for executing Headquarters-level emergency management responsibilities.

Several features of the system impede efficiency.

However, some features of the system impede efficient emergency management operations at Headquarters:

- The requirement for each program office to provide an Emergency Management Team results in duplication of effort.

DOE EMERGENCY MANAGEMENT SYSTEM

EOC INTERFACES DURING OPERATIONS

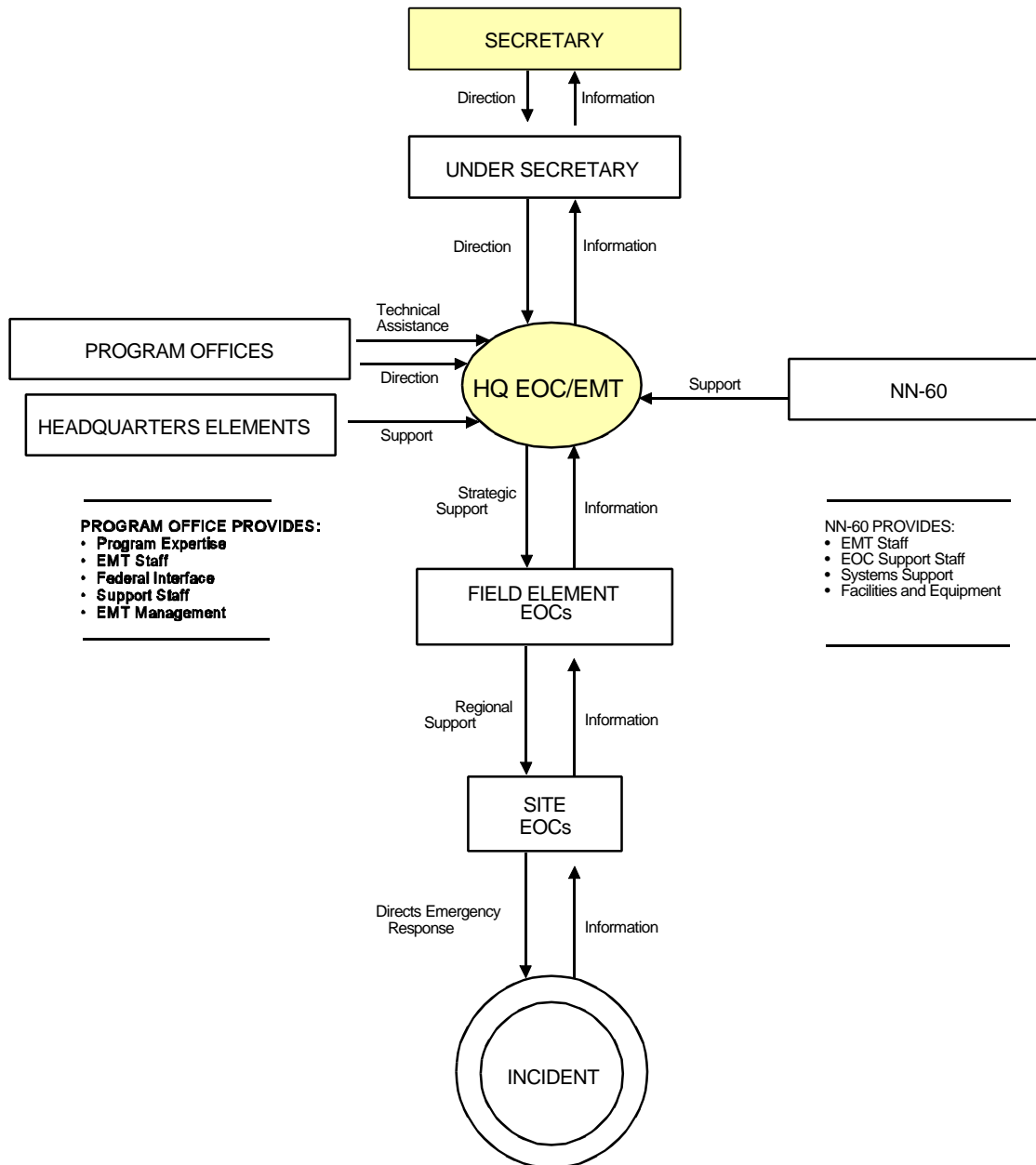


Figure 2

Specifically, each program office must develop its own Emergency Management Team plans and procedures, identify personnel to staff designated positions, and provide training and exercises for team members. Because of this duplication, the resulting total planning, staffing, and training burden is several times greater than would otherwise be necessary.

- Similarly, the requirement promotes non-standardization of team operations. A significant number of Emergency Management Team positions are staffed by Headquarters elements other than the responsible program office. These individuals must function under different procedures for each program office.
- The system envisions the initial response of the Executive Team, involving approximately twelve senior managers at the Assistant Secretary/Director level, whenever the Emergency Management Team is activated, regardless of whether the situation requires participation at that level.

Each program office is responsible for developing its own emergency response plans and procedures.

Program direction (i.e., the manner in which and the vehicles by which responsible program officials convey guidance and direction) for the operation of the Headquarters Emergency Management Teams and Emergency Operations Center comes from several sources, including DOE orders, the program offices, and NN-60. The Director of Emergency Operations is tasked with developing plans and procedures for the operation of the Headquarters Emergency Operations Center.

Each major program office is responsible for developing plans and procedures for Emergency Management Team/Emergency Operations Center operations for use when they have primary responsibility. Within this concept, program direction for emergency management operations incorporates some favorable aspects. For example:

- It requires the identification of a single program office to be the “office of primary responsibility” for facilities where two or more program offices share responsibilities.
- It includes detailed position instructions or desk books for the various positions in the Emergency Operations Center, for both program offices and NN-60.

However, there are also some serious weaknesses in program direction:

- Although responsibilities for developing plans and procedures for emergency management operations are clearly defined, those responsibilities are fragmented and result in duplication of effort. For example, each program office must develop its own Emergency Management Plan and Emergency Plan Implementing Procedures.
- There is no requirement for a single comprehensive plan or set of procedures for the operation of the Emergency Management Team and the Emergency Operations Center, nor is there a requirement for consistency and standardization among the program office plans and procedures.

- Responsibility is not assigned for the development and maintenance of a reference library or other resource materials for Emergency Management Team use.
- No criteria are provided for the selection, training, or proficiency of Emergency Management Team members.

2.2.2 Headquarters Emergency Management Operations Implementation

Responsibility for policy implementation is widely distributed below the Under Secretarial level.

Emergency management operations at Headquarters—that is, the functioning of the Emergency Management Team in the Emergency Operations Center during the response to and resolution of emergency conditions—rely upon contributions from most major Headquarters elements. Responsibility for implementing the components required for emergency management operations is widely distributed below the Under Secretarial level. As the system is designed, the first common superior of all the organizations in the Headquarters emergency management system is the Under Secretary; therefore, the system relies heavily on cooperation by elements below that level.

The methods by which the responsible organizations attempt to fulfill their emergency management operations tasks and the levels of success they have achieved in doing so are reported according to the following topics: plans and procedures; Emergency Management Team structure and staffing; Emergency Management Team training; facilities, equipment, and resources; and performance.

Plans and Procedures

Responsibility for developing plans and procedures is fragmented.

Plans and procedures applicable to Headquarters emergency management operations are those necessary to facilitate the effective, efficient functioning of the Emergency Management Team and the Emergency Operations Center under all foreseeable conditions. Responsibility for developing such plans and procedures is fragmented among the major emergency management players at the Headquarters level. For example:

- There is no comprehensive emergency management plan for Headquarters—no single governing plan or set of procedures for the operation of the Emergency Operations Center or the functioning of the Emergency Management Team, which, as defined previously, includes the Executive Team.
- Almost every major program office has developed an emergency management plan and accompanying implementing procedures for use when it is directing the Emergency Management Team. While the various plans and procedures are similar in many respects, they all contain some differences, reflecting differences in each program office's intended method of operation. Each plan adequately addresses the necessary tasks for Emergency Management Team functioning according to the prescribed system design. The procedures for each Emergency Management Team position are generally good, but are not standardized among organizations.

- NN-60 has also developed procedures for Emergency Operations Center operations that are not entirely consistent with the program offices' Emergency Management Team procedures. The program offices indicate that they intend to use their own procedures.
- There is no comprehensive contingency plan or procedure that addresses actions to be taken when reasonably foreseeable impediments to normal operations occur, such as equipment failures, power or other utility failures, or structural damage. Discussions with NN-60 staff indicate that backup systems are provided for a number of critical systems. However, there is no document available to facility or Emergency Management Team personnel that describes the capabilities and use of these backups.
- Coordination of plans and procedures, which is required by policy and should result in a reasonable level of standardization, has been attempted but has not been successful due to the inability of the program offices and NN-60 to reach agreement.
- NN-60 is generally responsible for ensuring adequate coordination and liaison with other Federal agencies with which the Department may have to cooperate for emergency management purposes. However, there is no indication that meaningful working relationships have been established with other Federal agencies that would facilitate or allow rapid, smooth cooperation during an emergency. For example, during "Exercise Rubble Glow," there were no procedures evident or employed for orienting, updating, tasking, or working with the other Federal agency representatives who arrived at the Emergency Operations Center.
- According to comments from field elements, most Headquarters Emergency Management Teams have not identified their information needs. The field Emergency Operations Centers indicate that they do not know what kind of information Headquarters wants or needs in order to fulfill Headquarters responsibilities.
- NN-60 has developed detailed procedures for the watch office. The watch office is co-located in the Emergency Operations Center and is responsible for initial notifications and for receipt and dissemination of information until the Emergency Management Team becomes functional.
- Exercise planning at Headquarters has rarely resulted in appropriate exercise and training objectives, scenario events, or a realistic level of exercise play for the Headquarters Emergency Management Team.
- Most program offices have developed duty officer procedures to assist in assembling an Emergency Management Team. The procedures vary from office to office in quality and detail; most have not been tested with a no-notice call-out. (A no-notice call-out is a test of the system in which duty officers call all their Emergency Team Members to determine their availability to respond as a member of the Emergency Management Team.)

Emergency Management Team Structure and Staffing

Executive and technical functions are separated organizationally and functionally.

The Emergency Management Team is structured essentially as established in policy, with a two-tiered structure. The Executive Team is chaired by the Under Secretary or the Assistant Secretary with programmatic responsibility for the facility experiencing the emergency. It includes other designated Assistant Secretaries and directors or representatives from other Headquarters elements. The Technical Operations Cadre is directed by the responsible program office and is staffed by program office technical experts; technical experts in such areas as safety and health, security, intelligence, and emergency management; personnel from other Headquarters elements responsible for external interfaces with Congress, the White House, other Federal agencies, and the public; and equipment operators and administrative personnel from the responsible program office and NN-60. As a result:

- The organizational structure (combined with the physical compartmentalization discussed later) hinders effective interaction between the key decision makers (i.e., the Executive Team) and technical support staff (i.e., the Technical Operations Cadre). The organization also somewhat isolates other groups of team members, decreasing the ability of all team members to stay abreast of the situation.
- The team is designed for a maximum initial response to a worst case incident rather than a graded response. However, appropriate adjustments to team size and composition can be made at any time after activation.
- There is disagreement between NN-60 and most program offices about who should provide administrative support personnel for the team. The program offices are currently required to provide some administrative support personnel, and they contend that all administrative support should be provided by NN-60.
- Technical Operations Cadre members are generally volunteers, except for those possessing certain required programmatic or technical expertise. No formal selection criteria, testing, or certification programs exist for team members. However, organizations appear to be careful and thoughtful about whom they select, and they take the process seriously. There is no indication of significant problems with the individuals selected.

Emergency Management Team Training

In the absence of frequent, actual emergencies, emergency management personnel need training and practice to maintain their proficiency.

The complex and unique nature of the equipment in the Emergency Operations Center and the unusual requirements of the emergency management process require extensive training and frequent practice to maintain proficiency. Training for Emergency Management Teams is as follows:

- Each program office is responsible for training its own team members, generally limited to its own Technical Operations Cadre personnel and any personnel from other supporting Headquarters elements that it can get to attend. Executive Team members

generally receive no formal training, nor does this team participate in all exercises.

- Nearly all major program offices conduct both classroom and practical training. Training is usually oriented around and leads up to an annual exercise. Training design and materials varied in quality from good to poor.
- For program offices that try to staff team positions three deep and conduct one exercise per year, it is possible for some team members to participate in a training exercise only once in three years.
- NN-60 conducts training for its own personnel. It also offers training to other organizations, including three levels of orientation for the Chron Tool (automated information management system); duty officer training; and exercise controller-evaluator training. Some program offices expressed dissatisfaction with the quality of this training, citing lack of objectives, formalization, and documentation, and lack of or incorrect focus.
- Some team members from other Headquarters elements (non-program office or NN-60) may receive no training other than that gained during drills and exercises.
- Team members are provided no general training about the various field facilities—their missions, programs, potential hazards, and so forth—and therefore may have no background or frame of reference to help them understand the implications of the particular emergency situation.
- Each program office must develop position-specific training programs for their respective personnel in addition to the training on Sun workstations and other equipment provided by NN-60.

Facilities, Equipment, and Resources

Some concerns about the Headquarters Emergency Operations Center at the Forrestal Building were noted.

Emergency management operations at Headquarters rely on the facilities of the Emergency Operations Center in the Forrestal Building. Concerns include:

- The physical layout of the center is compartmentalized, designed for compartmentalization of information and team element functions. The program offices are generally dissatisfied with the layout and the resulting fragmentation of the staff that it forces.
- The Executive Team, whose activities are anticipated to be generally deliberative in nature, is sited in the most spacious room in the center. The core of the Technical Operations Cadre management, perhaps the busiest group on the team, is housed in a small, crowded room.
- The information management system has conceptual and reliability problems. It is a UNIX based system using Sun workstations, which are not common in DOE and which most team members do not use outside the center. Chron Tool, the software system, is designed to provide a “paperless office” environment, also non-standard in DOE. Some reliability problems are still being experienced with the system; it is not unusual for the system to go down temporarily during operations, causing the team to have to switch to handwritten communications. Also, the system is not currently approved to handle classified information.
- Some isolated equipment deficiencies were identified, such as unreliable telephone headsets, insufficient numbers of FAX machines to handle emergency requirements, and inadequate word processor support for producing briefing materials.
- The automated status boards do not contain all the proper categories of information for team use. Consequently, the teams resort to using white boards to keep track of important information. There is no assurance that such information gets into the historical record or to the other team rooms.
- There is no central reference library with a responsible custodian to provide general and technical reference materials, maps, site information, and so on. Each organization or team member must provide needed reference materials.
- The watch office has no automated or efficient method for quickly making required notifications. It sometimes takes hours to contact all required external agencies and Departmental personnel to notify them of a situation.

NN-60 plans to upgrade the Technical Support Center in Germantown.

In addition to the Emergency Operations Center in the Forrestal Building, NN-60 maintains a Technical Support Center at the Germantown building. The center contains communications and video equipment, and is networked with the computer system in the Emergency Operations Center. NN-60 plans to upgrade the equipment in the Technical Support Center to enhance the capabilities of the alternate Emergency Operations Center. Although the program offices indicated that they have no specific intention of using the center during emergency operations, various Headquarters elements technical support staff, such as safeguards and security, plan to use it during emergency situations.

Performance

Exercises help predict performance during an actual emergency.

Operational emergencies requiring activation of the Headquarters Emergency Operations Center are rare. Consequently, the most reliable method available for predicting performance during real emergencies is performance during exercises.

Concerns have been noted in the past about the performance of the Headquarters Emergency Management Team.

Headquarters Emergency Management Team performance during exercises has historically been inadequate. Deficiencies have been repeatedly observed by evaluators and participants. These include:

- **Loss of strategic orientation.** The teams have a tendency to get too involved in trying to manage the response at the site and pay too little attention to the real missions of providing strategic direction, collecting and distributing information to other governmental agencies, and dealing with the press.
- **Lack of intra-team coordination.** There are significant coordination and staff action/staff direction problems within the teams. Information flow and staff functioning and supervision are neither consistent nor always effective.
- **Inability to use equipment as designed.** Actual use of the Chron Tool and other automated equipment does not take full advantage of equipment capabilities. Lack of familiarity with equipment capabilities and operating methods reduces the utility of the equipment and, in conjunction with the compartmentalized physical layout, impedes information flow and staff functioning.

2.2.3 Analysis of Headquarters Emergency Management Operations

Effective operations require appropriate personnel, plans, procedures, facilities, and equipment.

Emergency management operations at Headquarters require trained and capable personnel, appropriate plans and procedures, and suitable equipment and facilities to effectively represent Department-wide interests in executing the following Headquarters-level emergency management missions: providing overall (strategic) management and direction to a DOE emergency response; coordinating or assisting in the activation and deployment of DOE or other Federal agency response assets; coordinating overall public information activities for the Department; and interfacing with other national-level Federal agencies, Congress, the White House, and international agencies.

Past performance and current observations suggest that the Headquarters Emergency Management Team may not be effective in responding to an actual emergency.

Emergency management operations essentially deal with the unknown, or at least the unexpected. Success in such an endeavor requires that a framework and resources be in place and capable of functioning smoothly so that maximum effort can be fully applied to the emergency situation with a minimum of effort bled off trying to make the system itself function. Based on past (exercise) performance and current conditions, it is questionable whether a Headquarters Emergency Management Team could effectively accomplish its strategic mission if faced with a significant and immediate emergency situation. The factors contributing to this condition are numerous, and they are both structural and dynamic in nature.

Redundancy in assigned responsibilities expends significant resources, promotes local office interests over Department interests, and leads to wide variation in team operations.

Several problems result from a basic deficiency in the system design that assigns redundant responsibilities for providing Emergency Management Teams to the program offices. It burdens each of several program offices with the responsibility for accomplishing all the tasks associated with forming and managing an Emergency Management Team: planning, staffing, and training, each of which requires considerable resources. To further complicate this task, many of the team members belong to other Headquarters elements, such as NN-60, and are not subject to program office control. Maintaining several independent teams limits the amount of training and particularly the amount of practical (exercise) experience each member receives. It places decision making authority with the interested program office, which might result in a tendency to favor programmatic interests over the Department's overall interests. It results in several different methods of team operation, which tends to complicate matters for personnel who support more than one team and makes it impractical to customize facilities and equipment to best support a particular method of operation. Further it does not provide assurance that other responding Federal agencies would know what to expect, or what would be expected of them, in an emergency.

The Emergency Management Team structure involves a large number of senior managers and separates them from the technical support they need for decision making.

Another system design element that affects performance is the organization of the Emergency Management Team. The manner in which the concept of an Executive Team of senior managers and a Technical Operations Cadre of programmatic, technical, and support personnel is implemented in the Headquarters Emergency Operations Center has several drawbacks. It separates the decision makers from close interaction with the technical support staff who should be their principal advisors. It unnecessarily involves many senior managers who do not normally need to be involved in team operations. The Assistant Secretaries receive very little training and practice to equip them to function in the emergency management environment. In most cases there is little for them to do, and even less that they couldn't do from their own offices.

The strategic functions of the Emergency Management Team tend to be neglected during exercises.

Exercise experience has shown a tendency for the Emergency Management Team to get "caught up in the game" and lose sight of the strategic and information-gathering/distribution nature of its true

mission. This tendency to try to get too involved in directing the response can cause confusion and other problems at the field element and incident site, and can result in neglect of more proper activities such as focusing on long-term consequences and actions, coordinating support, and collecting and disseminating information to and from other agencies.

The layout of the Emergency Operations Center emphasizes the problems inherent in the separation of the executive and technical functions.

While the Emergency Operations Center has ample space and is extensively equipped, it is laid out to support a staff functioning concept that is not consistent with the mission. Due to the physical compartmentalization of the space, the “paperless office” design of the information handling systems, and the apparent difficulty many team members have in operating and using the equipment, the facilities seem to impair rather than promote effective staff functioning. If effective teamwork and efficient operation are to be achieved, it is essential that the physical facilities and equipment be designed to support a workable concept of staff functioning, and not vice versa.

In the absence of established agreements, the Emergency Management Team would have difficulty coordinating response to an actual emergency.

The Emergency Management Team may have difficulty in coordinating multiagency response in an actual emergency. In addition to the previously discussed issue of formal agreements, there is little indication that working level relationships have been established across the board to facilitate rapid, smooth cooperation and exchange of information and support resources. Consequently, any such necessary relationships would have to be established and worked out concurrent with ongoing emergency management operations, which could delay or otherwise impede effective actions.

Inadequacies in emergency management performance at the Headquarters level may not directly affect life-or-death outcomes, but they could have adverse Departmental consequences.

In summary, past (exercise) performance has generally been poor, and based on employment of the same concept of operations and other conditions, future performance can be expected to be poor. The poor performance is most likely not due to resources or personnel abilities, but rather to the problems inherent in and driven by a flawed system design and poor concept of operations. At the Headquarters level, the consequences of poor performance are not likely to result in immediate life-or-death outcomes. However, mishandling or poorly handling Headquarters emergency management responsibilities could hinder emergency activities at the sites, with potential adverse impacts on important programs, and could result in increased public and Congressional scrutiny.

2.3 Potential Consolidation of Headquarters Emergency Management Functions

The Secretary of Energy's proposed consolidation of emergency management is intended to eliminate duplicative functions and reduce the total number of staff.

Concurrent with the conduct of this special study, the Department was in the process of formulating recommendations for implementing a consolidation of Headquarters emergency management functions directed by the Secretary. Such a consolidation could result in significant changes in the way Headquarters provides emergency management program direction to the Department and in Headquarters emergency management operations. The direction provided by the Secretary contains two main components:

- Eliminate duplication of emergency management functions at Headquarters by consolidating functions and transferring personnel to a single office.
- Achieve a net reduction of at least 24 full-time equivalent Federal emergency management positions.

The implementation plan developed by a consolidation working group and submitted by NN-1 calls for consolidating the emergency management organizations from the Offices of Nonproliferation and National Security, Defense Programs, Policy, Environmental Management, Energy Research, and Nuclear Energy into an Office of Emergency Management. This plan also calls for consolidating national response assets, such as the Nuclear Emergency Search Team, the Accident Response Group, and others, that are provided by the field and managed by program offices. Other elements of the plan include:

- Cognizant Secretarial Officers would continue funding and coordinating emergency management activities.
- Cognizant Secretarial Officers would maintain duty officers and an Emergency Management Team Technical Operations Cadre. The plan does not address associated training/exercise responsibilities.
- The new Office of Emergency Management would retain some functions currently in NN-60, including appraisals and technical assistance, and would pick up new responsibilities for managing DOE response assets and other emergency management-related assets, as well as for coordinating with local, state, and tribal governments and industry.

The implementation plan appears to meet those goals.

Preliminary analysis of the consolidation implementation plan submitted by NN-1, without any amplifying information, yields a number of probable advantages and disadvantages.

Probable advantages include:

- It would eliminate or reduce some of the duplication of effort and fragmentation of responsibility that now exists among the program offices and NN-60.

- It would provide a single, centralized emergency management focal point at Headquarters for inter-Departmental and extra-Departmental interfaces.
- It could facilitate standardization of training, planning, procedures, direction, and coordination at Headquarters.
- Cost savings should result from the reduction in duplication of effort, consolidation of interfaces, and standardization of methods.

However, it does not address some deficiencies.

Probable disadvantages include:

- It removes emergency management personnel assets from the program offices, but apparently does not relieve them of their line management responsibilities for emergency management.
- Loss of emergency management personnel assets in the program offices could result in loss of some line management supervisory functions important to emergency management programs in the field.
- The Headquarters emergency management program could lose the programmatic expertise currently resident in the program offices, and the interest and involvement of program offices in the emergency management program could decline.
- If the program offices reassign other personnel assets in an attempt to continue to fulfill emergency management-related line management responsibilities, some cost savings associated with consolidation may not be realized.
- The implementation plan itself identifies some potential problems, but defers their solution to coordinating committees to be appointed upon implementation.
- The implementation plan does not address some current problems, such as the organization and makeup of the Emergency Management Team and the assignment of inappropriate functions to the Office of Emergency Management.

At this juncture, the Department has the opportunity to create a system design free from the defects that currently degrade the effectiveness of both overall program management and Headquarters emergency management operations. The proposed consolidation implementation plan addresses some of the defects, but does not correct or address some weaknesses.

3.0 CONCLUSIONS

1. ***Current Headquarters emergency management policy and guidance are generally well received and accepted by the field.***

Based on the results of interviews at Headquarters and in the field, the Department's emergency management community is generally satisfied with the overall emergency management policies and guidance provided by Headquarters, particularly as they relate to the overall system and its implementation in the field. This indicates that policy and guidance provide sufficient information regarding requirements, functions, responsibilities, and expectations to facilitate program implementation.

2. ***Overall, program management has not resulted in an effective or efficient emergency management system.***

A number of problems were noted, including overlapping and conflicting roles, responsibilities, and functions; inadequate levels of cooperation and coordination among both internal elements and external agencies; and the failure to adequately utilize available corrective mechanisms. These have resulted in conditions that have made effective implementation of the emergency management system throughout the Department more difficult and complicated and less efficient than it should be.

3. ***A less than effective concept of operations has contributed to significant and recurring deficiencies in the performance of the Headquarters Emergency Management Teams.***

The Headquarters Emergency Management Team's performance has exhibited significant and recurring deficiencies in exercises, such as inability to use equipment and lack of focus and coordination. Among the contributing factors are redundant responsibilities and the resulting planning, staffing, coordination, and training burdens; lack of a single standard approach for team functioning; inefficiencies in the implementation of the two-tiered concept of operations; loss of strategic and mission focus; and limitations of the physical facilities and configuration of the Emergency Operations Center.

4. ***Interfaces (internal and external) between emergency management organizations do not adequately support effective emergency management.***

Observations suggest incomplete or inadequate coordination with field components of the emergency management system and, to a greater degree, with other Federal agencies that could become involved with the Department's emergency management operations. As a result, initial coordination during an emergency could be degraded, and the necessary interfaces and relationships would have to be established and developed during an emergency response.

5. ***The Strategic Realignment Implementation Team's proposed plan for consolidating emergency management assets at Headquarters will not provide optimum results.***

While the proposed consolidation plan could allow correction of some existing problems at Headquarters, there are a number of basic problems it does not address. For example, it does not streamline or consolidate overlapping line management responsibilities, address the structure of the Emergency Management Team, or correct the assignment of inappropriate functions to the Office of Emergency Management.

4.0 CANDIDATE ACTIONS FOR ENHANCING THE EMERGENCY MANAGEMENT PROGRAM

1. *Consolidate responsibilities for Headquarters emergency management.*

The current emergency management system design distributes Headquarters management responsibility for the development and execution of policy among several Headquarters program offices. This requires that each program office invest resources in performing similar functions and results in multiple sources of Headquarters program direction to the field regarding emergency management.

Assigning management responsibility for emergency management to a single organization would eliminate redundancy in staffing and effort and reduce the size of the necessary Headquarters staff. The newly consolidated office would be responsible for the development of all DOE emergency management policy and would provide a single source of consistent guidance to all field elements. The newly consolidated office would also be responsible for the Headquarters Emergency Operations Center and associated operating and field interface procedures (see below), including the training of all designated Headquarters Emergency Operations Center responders.

The operations office managers would be responsible for management of all emergency management activities under their purview, including appraisals and training. Each Headquarters program office would focus on assisting its assigned operations offices in executing its emergency management responsibilities by identifying required resources, coordinating Headquarters actions, and providing technical experts to the Emergency Operations Center for affected facilities, as appropriate. The Associate Deputy Secretary for Field Management would continue to provide a crosscutting view of the operations offices in order to promote uniformity of approach and to ensure that operations offices' concerns are addressed.

To ensure a Department-wide perspective, the newly consolidated Emergency Management Office should not be assigned to a program office. There could be some benefits in placing it under Human Resources and Administration, which has existing responsibilities for the communications center and computers that might provide synergisms and economies of scale in facility and equipment operation and maintenance.

2. *Revise the Headquarters Emergency Operations Center team structure and concept of operations.*

Currently, the Headquarters Emergency Operations Center is staffed, in large part, by the program office having primary responsibility for the facility at which the emergency occurs. While this ensures that appropriate technical and programmatic expertise is involved in resolving the situation, it also promotes redundant effort, redundant training efforts, and continuing difficulties in achieving an efficient and effective configuration of the Headquarters Emergency Operations Center. In order to fully capitalize on the consolidation efforts (noted above), revisions to the

Headquarters Emergency Operations Center team structure and concept of operations should be undertaken.

To complement this consolidation, a coherent, focused concept of operations, as part of a comprehensive Headquarters Emergency Management Plan, is needed to provide the basis and guidance for Headquarters emergency management operations. The revised concept of operations should clearly focus emergency management operations on the missions, functions, and responsibilities appropriate to Headquarters. The revised focus should also ensure that the Headquarters emergency management response maintains a Department-wide perspective. All Headquarters Emergency Operations Center operating procedures, in coordination with field organizations, program offices, and other Headquarters elements as appropriate, will be developed and maintained by the newly consolidated Emergency Management Office.

The revised team structure should be a single tiered organization directed by an Emergency Manager. The Emergency Manager would be selected from a small group of senior managers designated by the Under Secretary in consultation with the Assistant Secretaries. When acting as Emergency Manager, he/she would represent the Department and would report to the Secretary through the Under Secretary. The Emergency Manager would also keep Assistant Secretary-level managers informed and involved as appropriate. A team Chief of Staff would be provided by the new Emergency Management Office. The Chief of Staff would supervise the staff functioning of the Emergency Management Team and advise the Emergency Manager on Emergency Operations Center/ Emergency Management Team capabilities and established emergency management procedures and protocols.

Technical expertise relevant to the emergency would continue to be provided by the program office with programmatic responsibility for the affected facility under direction of the Emergency Manager. Other team positions requiring special knowledge or technical expertise (e.g., public relations, security, health physics) would continue to be filled by appropriate Headquarters elements. Other positions, such as equipment operators and administrative assistants, would be provided by the new Emergency Management Office. All individuals designated to respond to the Emergency Operations Center would be trained by the new Emergency Management Office.

If effectively implemented, the listed actions could correct existing deficiencies in system design and implementation, reduce costs, and improve the capabilities and performance of the Headquarters Emergency Operations Center.

APPENDIX A

METHODOLOGY

Specific areas of focus in the four primary areas were:

- **Organization and structure.** Activity in this area involved examining the organizational structure of NN-60; emergency management personnel assets within cognizant secretarial/program offices and the Headquarters Emergency Management Teams; the emergency management-related authorities and responsibilities assigned to each organization; external agreements and relationships with other Federal agencies; and processes used for identifying, tracking, and correcting program deficiencies.
- **Policy, plans, and procedures.** Activity in this area involved evaluation of current and pending DOE orders, Emergency Management Guides, plans, Headquarters emergency management procedures, and exercise procedures.
- **Staffing and training of Emergency Management Teams.** This area encompassed examination of the sources for staffing emergency management positions; selection criteria; training and qualification requirements; continuity of position staffing; specialized emergency management training and its source; and practical experience available to or required of selected staff.
- **Facilities and equipment.** This area involved investigating the adequacy of the Headquarters Emergency Operations Center, including installed and normally available equipment and tools.

Approved Office of Oversight methods and procedures were employed during all phases of the special study to assure thoroughness, consistency, and validity of results. Pre-planning activities included initial scoping of the task, development of a scoping paper, identification and collection of needed documents, and identification of team personnel. The team assembled to plan the study in detail by clarifying management goals, reviewing documents, analyzing available

information, determining appropriate data collection activities, and refining the study's scope.

Data Collection

Based on the scope and objectives of the study, three data collection activities identified as most appropriate were employed:

- **Document reviews.** Document reviews were used to gain an understanding of applicable policy, procedures, organizations, resources, and historical performance data related to the Headquarters emergency management system.
- **Interviews.** Interviews were the primary source of updated information. Senior managers and emergency management staff at NN-60, cognizant program offices, other Headquarters elements, and several field elements were interviewed in depth. Interviews served to expand information gained from document reviews, determine actual practices, and solicit facts and opinions regarding program status and problems as well as recommended solutions. Headquarters interviews were conducted to obtain both a management and a working staff level perspective from each Headquarters organization with emergency management responsibilities. Operations office interviewees were also selected to represent both staff and management levels, and provided a field perspective on emergency management policy and interfaces with Headquarters.

Interviews were highly structured to ensure that the same information was covered in the same context with each class of interviewee. Specific questions were developed for each class of interviewee. Team members had the latitude to ask additional followup questions or pursue expanded lines of questioning on an ad hoc basis as appropriate.

- **Observation.** Use of observation as a formal data collection tool was limited to the Headquarters and Albuquerque Emergency Operations Centers during an emergency management exercise (“Exercise Rubble Glow”) on May 17, 1995. Data sought included that pertaining to Headquarters functioning; the nature of the interface between the Headquarters and Albuquerque Emergency Operations Centers; and the status of previously identified deficiencies associated with the Headquarters Emergency Operations Center.

Analysis

Collected data were subjected to two levels of formal analysis before being applied to determination of conclusions or candidate actions for enhancing the program. The first level consisted of screening for:

- **Pertinence.** The large volume of data available from document reviews and interviews was screened by individual study team members and again by the study team to determine which were pertinent to the objectives of the study. Pertinent information was retained for further analysis, and other information was set aside.
- **Reliability.** All interview data (and a small amount of documentary data) were evaluated for reliability to ensure that conclusions were not skewed by erroneous information thought to be factual. Information presented as opinion was noted as such. Information presented to the study team as factual was evaluated based on comparisons with accepted baseline information; corroboration from other data; or supporting evidence provided by the information source.
- **Grouping.** Data were grouped according to their applicability to one or more of the study’s main objectives, or to intermediate objectives established to assist in achieving the main objectives.
- **Trending.** Data were compared to identify trends in various aspects of the subject matter, including processes and procedures mandated; processes and procedures used; problems identified; and solutions proposed.
- **Categorization.** Information about various elements of the emergency management system was categorized as relating to a strength, a weakness, or neither (“neutral”). Such categorizations were based on characterization (if any) by the source; characterization by the study team; and observable empirical effects.
- **Comparison with models.** System characteristics were compared against proven and generally accepted model concepts for emergency management systems and subsystems.
- **Iteration.** The analytic process was iterative in nature. The cycle was repeated several times, with each subsequent iteration providing a more focused, critical, and detailed examination of the data.
- **Consensus building.** Decision making during the analytical process and determination of conclusions and candidate actions were based on consensus among the study team. Consensus was achieved by weighing the nature of the data (fact, opinion), its impact or implications based on observable results, and the knowledge and experience of the study team.

The second level of analysis involved critical consideration of all pertinent, reliable data, and led to determination of results and subsequent formulation of conclusions and development of candidate actions. This level of analysis, conducted by the study team, included:

